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RECORD OF DECISION AMENDMENT
DOUGLASSVILLE DISPOSAL SITE
OPERABLE UNIT TWO, SOURCE AREAS 2 AND 9

SCOPE AND ROLE OF THE RESPONSE ACTION

This Record of Decision (ROD) Amendment addresses the remedial actions selected for Source Areas 2 and 9 at the Douglassville Disposal Site (a.k.a., Berks Associates, Inc.). in Union Township, Berks County, Pennsylvania. Source Areas 2 and 9 were addressed in a ROD issued June 30, 1989. Specifically, oily diatomaceous earth filter cake wastes in Source Area 2, and contaminated sediments in a drainageway in Source Area 9 were designated for onsite thermal treatment (incineration) in the June 1989 ROD. This ROD Amendment changes the selected remedy for these materials from onsite incineration to lime-based stabilization. All other aspects of the June 1989 ROD remain unchanged. The remedial actions selected for the diatomaceous earth filter cake wastes in Source Area 2 and the contaminated sediments in Source Area 9 are necessary in order to respond to environmental and public health threats presented by these materials.

SITE DESCRIPTION AND HISTORY

The Site is located in Union Township, Berks County, Pennsylvania (see Figure A). The 50-acre Site is located in a rural setting on the south bank of the Schuylkill River north of State Route 724. The town of Pottstown, with a population of about 2,500 people, is located approximately 4 miles downstream of the Site.

Waste oil processing operations were conducted on the Site between approximately 1941 and 1986. Those operations included waste oil storage lagoons, processing facilities, sludge lagoons, land farming areas, and various other waste disposal areas. Initial operations involved recycling of waste solvents and lubrication oil. In approximately 1979, the operation was converted to the refining of waste oil for use as fuel. Operations ceased in early 1986.

Beginning in 1982, EPA conducted a series of investigations to determine the nature and extent of contamination at the Site. Those studies and investigations resulted in the designation by EPA of ten “source areas” of contamination (see Figure B). The source area identification was based on the operations that took place in those areas and the nature and extent of contamination. Those source areas have been described by EPA as follows.

Source Area 1 - Processing facility/tank farm
Source Area 2 - Backfilled lagoon and diatomaceous earth filter cake disposal area
Source Area 3 - Land farm
Source Area 4 - Former sludge disposal Area A
Source Area 5 - Former sludge disposal Area B
Source Area 6 - Possible land farm

Source Area 7 - Incinerator and surrounding area
Source Area 8 - Drum and tanker area
Source Area 9 - Backfilled lagoon
Source Area 10 - Drum, tank, and refuse area

EPA's investigations have identified soils and sediments at the Site that are contaminated with volatile organic compounds (VOCs), phenolic compounds, phthalate esters, polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and various inorganic compounds, particularly lead. The Site was added to the Superfund National Priorities List (NPL) in 1983, making the Site eligible for cleanup with federal funds.

In September 1985, EPA issued a Record of Decision (ROD) for certain remedial activities at the Site. That ROD was subsequently superseded by two RODs that addressed the performance of remedial activities in what EPA describes as two operable units. The first of those RODs, issued by EPA in June 1988, established the selected Remedial Action for Operable Unit 1 (OU1). The second ROD, issued by EPA in June 1989, selected the Remedial Action for Operable Unit 2 (OU2).

The ROD for OU1 addressed the decommissioning of the tanks and former processing facilities and the transporting and proper disposal of waste sludge, liquids, and debris associated with those facilities. The Remedial Design for OU1 was prepared for EPA by Haliburton NUS Corporation. Implementation of that work was begun by EPA in July 1989 and has been completed.

In June 1989, a ROD for OU2 was issued by EPA. That ROD described the following Remedial Actions for the remainder of the Site:

1 . Excavation and on-Site thermal treatment (incineration) of an estimated 48,400 cubic yards of contaminated soils and sludges (i.e., diatomaceous earth filter cake waste) from Source Area 2 and oily sediment from the drainage ditch that runs through Source Area 9 to the Schuylkill River.

2. Disposal of thermally treated materials by backfilling into Source Area 2.

3. Covering of the backfilled area with clean soil followed by revegetation.

4. Capping Source Area 1, 4 and 5 with 1 foot of fly ash and 2 feet of soil followed by revegetation.

5. Capping Source Areas 3, 6 and 9 (approximately 10 acres) with clean soil followed by revegetation.

6. Imposing deed restrictions to prevent soil disturbance and well drilling on the

property.

7. Establishing alternate concentration limits (ACLs) for groundwater that would not cause adverse effects on the Schuylkill River.

In April 1992, EPA issued an Explanation of Significant Differences (ESD) which called for the soil cover to be extended over Source Area 7. Implementation of the ROD remedy for OU2 is being undertaken in two phases. Phase I addressed the remediation of sludges and contaminated soils at Source Areas 3, 4, 5, 6 and 7 by placement of a cover system and revegetation. Those areas comprise the portion of the Site located north of an abandoned railroad bed that runs east/west through the approximate center of the Site. The abandoned railroad bed is now owned by the Schuylkill Greenway Association. Remedial Designs for those areas were prepared by the United States Army Corps of Engineers (USACE). In July 1991, EPA issued a Unilateral Administrative Order (UAO1) to potentially responsible parties (PRPs) requiring implementation of the Phase I remedy. A group of PRPs completed that work and notified EPA of its completion in May 1993.

The Remedial Design for Phase II of OU2, consisting primarily of the thermal treatment' remedy (on-Site incineration) for Source Areas 2 and 9, was completed by the USACE for EPA in March 1993. On June 30, 1993, EPA issued a Unilateral Administrative Order (UAO2) to PRPs requiring the implementation of the Phase II remedy as conceptually designed by the USACE. That Order was accompanied by the design data and other documents prepared by the USACE and its consultants. The PRPs subsequently informed EPA of their intentions to not comply with the UAO2.

In July 1991, the United States filed a civil cost recovery action under Section 107 of CERCLA against PRPs to recover costs incurred by the United States for Site activities and seeking a declaratory judgment on liability for the recovery of all future response costs incurred by the United States. During the course of the litigation, the PRPs expressed concerns regarding EPA's selected thermal treatment remedy for Phase II of OU2. The court encouraged EPA and the PRPs to discuss alternatives to EPA's selected remedy, in light of new technologies which had become available and were successfully implemented. The PRPs submitted to EPA a Supplemental Alternatives Analysis Report in August 1993. This report evaluated alternative technologies for remediating the contaminated sediments,. soils, and diatomaceous earth filter cake waste in the Phase II area.

Based upon the information presented, EPA agreed to reconsider the on-Site incineration Remedial Action for Phase II of Operable Unit 2, specifically, EPA is reconsidering the technology that will be used to remediate oily diatomaceous earth filter cake waste and sediments from Source Areas 2 and 9. Under an Administrative Order on Consent (AOC), a Focused Feasibility Study (FFS) was developed by the PRPs to evaluate these alternative technologies. The AOC requires the PRPs to conduct an FFS to:

> "... determine and evaluate (based on treatability testing, where appropriate) the DCR stabilization technology for remedial action to prevent, mitigate, or otherwise respond to or remedy the release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan at 40 CFR Part 300 for Remedial Actions and shall address the factors required to be taken into account by Section 121 of CERCLA, 42 U. S.C. Section 9621 ." ["DCR' stands for "Dispersion by Chemical Reaction" and is a specific type of lime-based waste stabilization technology.]

Purpose and Scope of the Focused Feasibility Study

The purpose of the FFS is to provide information that is necessary for a Record of Decision for selection of a Remedial Action that is consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). In compliance with the AOC, an FFS has been conducted, by Barr Engineering Company on behalf of the PRPs, to evaluate the DCR stabilization technology, as well as other equivalent lime-based stabilization processes, in accordance with the requirements of CERCLA, the NCP, the AOC, and relevant EPA guidance documents including EPA's October 1988 "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA."

The FFS evaluates three Remedial Action alternatives for Phase II of OU2 for the Douglassville Disposal Site:

> Remedial Action Alternative 1: Stabilization, which consists of stabilizing the diatomaceous earth filter cake waste and contaminated sediments using the DCR technology or other lime-based stabilization process, and disposal of the stabilized material in an on-Site landfill.
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> Remedial Action Alternative 2: On-Site incineration, which consists of the on-Site incineration of the diatomaceous earth filter cake waste and contaminated sediments; stabilization of the incineration residuals, if necessary, to remove a toxicity characteristic; and disposal in the excavation area.
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> Remedial Action Alternative 3: Off-Site incineration which consists of transportation off-Site and incineration of the diatomaceous earth filter cake waste and contaminated sediments at a commercial incineration facility.

All three alternatives include soil covering or capping for Source Areas l, 2, and 9, as specified in the June 1989 ROD for OU2.

Alternative 1 (stabilization) involves excavation of the diatomaceous, earth filter cake waste from Source Area 2 and contaminated sediments from Source Area 9, on-Site treatment of

the material using waste stabilization technology, and disposal of the residuals in an on-Site landfill. The surface of the Phase II area which would not be covered by the on-Site landfill would, nonetheless, be covered as described in the June 1989 ROD for OU2. “Stabilization” is a broad term used in the FFS to identify a range of technologies that rely on the addition of reagents or additives to immobilize waste constituents and improve the handling and physical characteristics of a waste. These technologies differ somewhat in their treatment mechanisms for immobilizing waste constituents and are alternatively termed “solidification,” “immobilization,” “fixation,” and “encapsulation.” The stabilization process option that is evaluated in the FFS involves the use of the DCR stabilization technology and other lime-based stabilization processes that were not evaluated by EPA when it previously evaluated stabilization during the initial Feasibility Study (FS). An Alternative incorporating a stabilization technology was screened from further consideration by EPA in the Phase II RI/FS for the Site based upon the state of the technology in the late 1980's.

Alternative 2 (on-Site incineration) involves excavation of the diatomaceous earth filter cake waste and contaminated sediments, on-Site treatment of the material using thermal treatment technology (rotary kiln furnace incineration), stabilization of the incineration ash if it is found to be a hazardous waste, and disposal of the ash in the Source Area 2 excavation area. The alternative that is evaluated in the FFS is the on-Site incineration remedy as it is described in EPA’s design documents.

Alternative 3 (off-Site incineration) involves excavation of the diatomaceous earth filter cake waste and contaminated sediments, hauling and off-Site treatment of the material using thermal treatment technology (incineration), stabilization of incineration ash, if required, by the incineration vendor, and disposal of the ash by the incineration vendor in an off-Site landfill. An Alternative incorporating off-Site incineration was rejected by EPA following the detailed analysis of alternatives in the Phase II RI/FS for the Site. This alternative was rejected, in part, because there was a shortage of off-Site incineration facilities at that time.

The FFS presents additional information that has been developed with regard to the on-Site incineration remedy (Alternative 2) and two remedies that were previously rejected by EPA (Alternatives 1 and 3). The analysis presented by Barr Engineering in the FFS is considered supplemental to the previous technology and alternatives evaluations performed by EPA because it does not reinvestigate the universe of potentially applicable technologies and alternatives.

SUMMARY OF SITE RISKS

During the conduct of the 1988 RI/FS, an analysis was performed to estimate the health problems that might result if the soil, waste and other contaminated materials at the Douglassville Disposal Site were not cleaned up. This analysis is referred to as a baseline risk assessment. In conducting this assessment, the focus was on the health effects that could result from direct exposure to the contaminants that might occur by the surface soil coming into contact with the skin, from direct ingestion of the surface soil or waste material by a child playing in the

areas, and from inhalation of fugitive dusts or emissions from the surface soil or wastes.

The risk assessment was focused on the major contaminants of concern: volatile organic compounds, phenols, polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and lead. Some of these contaminants are known, or are suspected, carcinogens.

EPA's samplings of the various "source areas" at the Site found varying ranges of contaminant concentrations depending upon the particular source area that was sampled. Some source areas were found to be more contaminated than others. Concentrations of contaminants found in surface soils and waste materials at the Site are associated with excess lifetime cancer risks of approximately 5×10^{-5} to 1×10^{-6} depending upon the particular area that was sampled. A risk of 5×10^{-5} means that, if no cleanup action is taken, then 5 additional people per 100,000 have a chance of contracting cancer as a result of a lifetime of exposure to the contaminated soil or waste material. A risk of 1×10^{-6} means that an additional one person per 1,000,000 has a chance of contracting cancer. The estimates were developed taking into consideration various conservative assumptions about the likelihood of a person being exposed to the soil or waste materials and the toxicity of the contaminants.

In the 1988 RI/FS document, it was calculated that the risk of additional cancers associated with direct dermal contact, accidental ingestion of soil and wastes, and inhalation of fugitive dusts for Source Area 2 was 5.9×10^{-5}, and for Source Area 9, the risk was 8.6×10^{-6}.

EPA and the Pennsylvania Department of Environmental Protection (PADEP) have determined that, in cleaning up or preventing exposure to the contaminated soils and wastes at the Site, the excess lifetime cancer risk would be reduced to an acceptable value (less than one excess cancer per million.)

SUMMARY OF ALTERNATIVES

For the purposes of the Focused Feasibility Study (FFS), Barr Engineering Company considered three (3) alternatives, as noted previously, for the remediation of the contaminated materials in Source Areas 2 and 9.

On-Site. incineration is an engineered process that uses thermal oxidation at high temperatures to reduce the volume of a hazardous material by vaporizing the organic constituents and oxidizing them via combustion. On-Site incineration systems are capable of achieving a high overall degree of destruction and control for a broad range of organic hazardous substances. On-Site incineration has been shown to be effective in treating soils, sediments, sludges and liquids containing primarily organic contaminants. The organic contaminants are destroyed by subjecting them to temperatures typically greater than 800ºC in the presence of oxygen, which causes the volatilization and oxidation of these substances. On-Site incineration is not effective for treating metals because metals, being elemental, are not destroyed by the incineration process.

At the Douglassville Disposal Site, the on-Site incineration alternative for Source Areas 2 and 9 would involve the assembly of a transportable commercial incineration unit on the Site. Materials from Source Areas 2 and 9 would be excavated and incinerated in the unit. Ash residues from the incineration process would be analyzed for the occurrence of possibly-toxic residuals, notably lead. If significant concentrations of leachable lead were found to be present in the ash, then that ash would be subjected to a stabilization treatment to reduce the ability of the lead to leach from the material. The ash residuals would then be landfilled on-Site in a residual waste landfill meeting the requirements of the Pennsylvania Department of Environmental Protection (PADEP). It is currently estimated that approximately 37,000 cubic yards of oily wastes exist in Source Areas 2 and 9.

Barr Engineering, on behalf of a group of the PRPs, has adjusted the cost estimate that was presented in the June 1989 ROD for on-Site incineration. Based upon Barr Engineering's adjusted cost estimate, on-Site incineration has a present net worth of $34 million to $48 million. Barr Engineering believes that the on-Site incineration remedy would require two to six years to complete.

The Superfund Law requires that Remedial Actions must comply with the substantive portions of federal environmental laws, and of state environmental and facility siting laws that are more stringent than federal laws. These "applicable or relevant and appropriate requirements" (ARARs) must be determined and complied with unless a waiver of the ARAR can be justified. Major ARARs associated with the on-Site incineration remedial alternative are:

- Attainment of the National Ambient Air Quality Standards; attainment of new source performance standards for incinerators; and prevention of significant deterioration (of air quality) requirements under the federal Clean Air Act;

- Compliance with operating and performance standards, and air emissions standards under the federal Resource Conservation and Recovery Act;

- Compliance with standards for the incineration of PCBs established under the Toxic Substances Control Act;

- Compliance with air quality requirements under the Pennsylvania Air Pollution Control Act;

- Attainment of National Pollution Discharge Elimination System standards for any stormwaters discharge to the Schuylkill River;

- Pennsylvania Solid Waste Management Act, Chapter 264, requirements for treatment and disposal facilities;

- Pennsylvania Solid Waste Management Act (SWMA) Chapter 269 requirements regarding treatment of hazardous waste within a flood plain or floodway.

The major ARARs for the on-Site incineration remedial alternative are discussed more fully in the ROD dated June 30, 1989 at pages 55-56.

The off-Site incineration Alternative involves the excavation of the diatomaceous earth filter cake material in Source Area 2 and the contaminated sediments in Source Area 9, transporting and off-Site treatment of the materials using thermal treatment technology (incineration) at a commercial incineration facility, stabilization of the ash residuals by the commercial incineration facility, if necessary, and disposal of the residuals in an off-Site landfill. The affected Source Areas on-Site would then be covered or capped. Barr Engineering Company estimates the present net worth of the off-Site incineration alternative to range between $64 million and $69 million and the timeframe for implementation is expected to be 18 months.

Major ARARs associated with the off-Site incineration alternative are:

- National Pollution Discharge Elimination System standards for any stormwater that might be discharged to the Schuylkill River as administered under regulations promulgated under the Pennsylvania Clean Streams Law, specifically, 25 PA Code Chapter 92, §§ 92.31 (relating to effluent standards), 92.57 (relating to effluent limitations), 92.73 (relating to the prohibition of certain discharges); 25 PA Code Chapter 93, §§ 93.3 (relating to protected water uses), 93.5 (relating to the application of water quality criteria to discharge of pollutants), 93.6 (relating to general water quality criteria), 93.7 (relating to specific water quality criteria), 93.8 (relating to the development of site-specific water quality criteria), 93.8a (relating to toxic substances), 93.9f (relating to the Schuylkill River); 25 PA Code Chapter 95, §§ 95.1 (relating to general requirements), 95.2 (relating to waste treatment requirements); 25 PA Code Chapter 97, §§ 97.15 (relating to quality standards), 97.63 (relating to oil-bearing waste waters), 97.82 (relating to allowable discharges), 97.91 (relating to pretreatment requirements for industrial users); and 25 PA Code Chapter 102, §§ 102.4 (relating. to general erosion and sedimentation control), 102.11 (relating to general requirements), 102.12 (relating to control measures), 102.22 (relating to stabilization);

- Pennsylvania Air Pollution Control Act, specifically 25 PA Code Chapter 123 §§123.1 (relating to prohibition of certain fugitive emissions), 123.2 (relating to fugitive particulate matter) and 25 PA Code Chapter 127, Subchapter D (relating to prevention of significant deterioration of air quality) as these relate to the control of emissions resulting from the excavation of the waste materials on-Site.

The stabilization remedial Alternative involves the excavation of the diatomaceous earth filter cake waste from Source Area 2 and excavation of contaminated sediments from Source

Area 9. These materials would be treated on-Site using a lime-based stabilization technology and the residuals created by the stabilization process would be disposed of by landfilling those residuals into the Source-Area 2 excavation as was called for in the June 1989 ROD. The Source Areas would then be covered or capped.

Stabilization is generally described as being a process which acts to reduce the solubility or mobility of the contaminants. Stabilization involves adding materials that fully or partially maintain the hazardous constituents in a highly immobile form. The fundamental mechanisms of stabilization include macro- and micro-encapsulation, adsorption and absorption. Stabilization of wastes can form a material of high structural integrity. Barr Engineering Company estimates the present net worth of the stabilization alternative to range between $13 million and $18 million, and the timeframe for implementation is expected to be 8 to 16 months.

The major ARARs associated with the stabilization alternative are:

- RCRA Part 264, Subpart X standards for miscellaneous units, §§ 264.601-264.603;

- RCRA Part 265, Subpart Q standards for chemical, physical, and biological treatment, §§265.401-265.406;

- TSCA regulations at 40 CFR § 761.60(e) relating to treatment and disposal requirements for PCBs at concentrations greater than 50 mg/kg;

- Pennsylvania's Clean Streams Law regulations promulgated under Title 25 of the PA Code, notably Chapter 92 (regarding NPDES standards) for any stormwater that might be discharged to the Schuylkill River, specifically, 25 PA Code Chapter 92, §§ 92.31 (relating to effluent standards), 92.57 (relating to effluent limitations), 92.73 (relating to the prohibition of certain discharges); 25 PA Code Chapter 93, §§ 93.3 (relating to protected water uses), 93.5 (relating to the application of water quality criteria to discharge of pollutants), 93.6 (relating to general water quality criteria), 93.7 (relating to specific water quality criteria), 93.8 (relating to the development of site-specific water quality criteria), 93.8a (relating to toxic substances), 93.9f (relating to the Schuylkill River); 25 PA Code Chapter 95, §§ 95.1 (relating to general requirements), 95.2 (relating to waste treatment requirements); 25 PA Code. Chapter 97, §§ 97.15 (relating to quality standards), 97.63 (relating to oil-bearing waste waters), 97.82 (relating to allowable discharges), 97.91 (relating to pretreatment requirements for industrial users); and 25 PA Code Chapter 102, §§ 102.4 (relating to general erosion and sedimentation control), 102.11 (relating to general requirements), 102.12 (relating to control measures), 102.22 (relating to stabilization);

- Pennsylvania SWMA, Title 25, Chapter 269, Subchapter A regulations relating to the siting of hazardous waste treatment and disposal facilities, particularly §§ 269.22 (relating to flood hazard areas), and 269.23 (relating to wetlands);

- The Pennsylvania Air Pollution Control Act regulations promulgated under Title 25 of the PA Code, specifically 25 PA Code Chapter 123 §§ 123.1 (relating to prohibition of certain fugitive emissions), 123.2 (relating to fugitive particulate matter); 25 PA Code Chapter 127, Subchapter D (relating to prevention of significant deterioration of air quality); 25 PA Code Chapter 131 §§ 131.2-131.4 (regarding ambient air quality standards); and 25 PA Code Chapter 139, Subchapter A (regarding sampling and testing methods and procedures) as these relate to the control of emissions resulting from the excavation of the waste materials on-Site.

EVALUATION OF ALTERNATIVES

This section provides a description of the nine criteria EPA uses to evaluate alternatives and an analysis of the alternatives under consideration at the Douglassville Disposal Site. The evaluation criteria are as follows:

- Overall Protection of Human Health and the Environment - addresses whether a remedy provides adequate protection and describes how risks are eliminated, reduced, or controlled.

- Compliance with ARARs - addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of environmental statutes.

- Long-Term Effectiveness and Permanence - refers to the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals are achieved.

- Reduction of Toxicity, Mobility, or Volume - is the anticipated performance of the treatment technologies a remedy may employ.

- Short-Term Effectiveness - addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

- Implementability - the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a

particular option.

- Cost - includes estimated capital and operation and maintenance costs.

- State Acceptance - indicates whether, based on its review of the FFS and Proposed Plan, the State concurs with, opposes, or has no comment on the preferred alternative.

- Community Acceptance - summarizes the public's general response to the alternatives described in the Proposed Remedial Action Plan and the FFS Report. The specific responses to public comments are addressed in the Responsiveness Summary section of this ROD Ammendment.

COMPARATIVE ANALYSIS OF REMEDIAL ACTION ALTERNATIVES

This section compares the three alternatives and provides a brief evaluation of those alternatives with the nine NCP criteria listed above.

1. Overall Protection of Human Health and the Environment:

EPA believes that the three alternatives are equally effective at protecting human health and the environment with regard to exposure to fugitive dust and contaminated soil at the Site. EPA also believes that the implementation of each of the alternatives would create a potential for fugitive emissions to escape the boundaries of the Site during implementation of a Remedial Action if those emissions are not controlled. EPA believes, however, that each of the Remedial Action alternatives can be implemented without significantly endangering either human health or the environment by applying available engineering controls..

2. Compliance With ARARs:

EPA believes that all three of the remedies considered in the FFS can be designed so that their implementation would comply with federal and state ARARs. The on-Site incineration alternative would have the greater number of ARARs with which it must comply; the off-Site incineration alternative would have the fewest. All remedies would result in a finished Remedial Action which complies with federal and state ARARs.

3. Long-Term Effectiveness and Permanence:

It is EPA's belief that all three alternatives discussed in the FFS would have essentially equal long-term effectiveness and permanence. On-Site incineration would destroy the organic components of the Source Area 2 and 9 wastes, however, the inorganic constituents of those wastes (e.g., lead) would not be destroyed. At the end of the incineration process, those inorganic components left in the ash residuals would be tested for their ability to leach from the

ash. If they would be found to leach excessively, then the ash would be subjected to a stabilization technology prior to the landfilling of that ash on-Site. This would prevent exposures to the public and to the environment. The lime-based stabilization alternative would not destroy any of the hazardous components of the wastes but would immobilize a large portion of those components sufficiently to produce a long-term, protective situation when the stabilized materials are landfilled on-Site. Off-Site incineration would destroy the organic components of the wastes and the ash residual would be dealt with as necessary by the off-Site commercial incineration facility. The areas from which the wastes were removed would be backfilled or covered.. As such, the hazardous components of the wastes shipped off-Site would no longer be of concern at the Site.

4. Reduction in Mobility, Toxicity, or Volume:

The off-Site incineration alternative provides the greatest reduction in mobility, toxicity or volume at the Site because the filter cake waste and contaminated sediments would be removed from the Site. On-Site incineration combined with stabilization of the ash residuals, if necessary, would result in significant reductions in volume compared to the existing wastes. It would also eliminate the toxicity and mobility components of all the organic contaminants since those contaminants would be destroyed during the incineration process. The mobility, and therefore the availability to receptors, of the inorganic components of the waste would be greatly reduced by stabilization, where required, and by landfilling. The stabilization alternative would increase the volume of the waste materials, but would immobilize the major portion of the hazardous constituents of the waste. This combined with the proper landfilling of those stabilized wastes on-Site would greatly reduce the availability of these hazardous constituents to possible human and environmental receptors.

5. Short-Term Effectiveness:

The short-term effects of the off-Site incineration alternative would be confined within the approximately 18 month timeframe required for its implementation. Those short-term effects include on-Site machinery noise produced in earth-moving activities and the noise of truck traffic on local roads. Emissions of volatile organic compounds during the excavation of the wastes for shipment off-Site would have to be maintained at levels acceptable for public exposures. The term of the remediation would possibly be longer under the on-Site incineration alternative. Possible short term effects include the noise generated by the construction of, by the operation of, and by the dismantling of the transportable incineration unit. Emissions of volatile organic components of the waste would have to be monitored and possibly controlled during the excavations and handling of the waste on-Site. Stack emissions from the incinerator would have to be maintained within acceptable levels.

Barr Engineering estimates that the total duration of the stabilization alternative would be 8 to 16 months. As with the other alternatives, the volatile organic emissions from the waste would require monitoring and, if found to be unacceptable, control. Noise on-Site would be

limited to daytime working hours.

The three alternatives would, because of their various differences, create somewhat differing short-term impacts. EPA believes that on-Site incineration would have greater shortterm effects primarily because the alternative could potentially require a longer timeframe for implementation. EPA also believes that the short-term impacts of the off-Site incineration alternative and the stabilization alternative are essentially equivalent.

6. Implementability:

The stabilization alternative and the off-Site incineration alternative have fewer impediments to implementation than does on-Site incineration. The on-Site incineration alternative would require more, and more complex, equipment at the Site than either the stabilization or the off-Site incineration alternatives. Also, the timeframe for implementation of the on-Site incineration would be longer than the timeframes for the other two alternatives.

7. Cost:

Barr Engineering has estimated that both the on-Site and the off-Site incineration alternatives would be substantially more expensive than the stabilization alternative. According to Barr, the stabilization alternative would likely cost $13 million, whereas the on-Site incineration alternative could reasonably be expected to cost $34 to $38 million. Barr estimates that a reasonable estimate of cost for the off-Site incineration alternative is $64 million.

8. State Acceptance:

The Commonwealth of Pennsylvania Department of Environmental Protection has reviewed the Proposed Remedial Action Plan and a draft of this Record of Decision (ROD) Amendment. The commonwealth has not concurred on the remedy. A copy of the commonwealth's letter of non-concurrence is attached.

9. Community Acceptance:

Responses to public comments on the Proposed Remedial Action Plan are summarized in the Responsiveness Summary which is attached to this ROD Amendment.

THE SELECTED ALTERNATIVE

EPA, in the June 1989 ROD for OU2, selected on-Site thermal treatment for the diatomaceous filter cake wastes in Source Area 2 and contaminated sediments in Source Area 9. That selection was made after considering a number of other alternatives, including off-Site incineration and stabilization. Off-Site incineration was not selected, in part, because of the relative unavailability of commercial off-Site incineration facilities with capacity to handle the

volume of waste material from the Site. Stabilization was not selected primarily because the processes available at the time were not deemed to be suitable for materials that contained greater than 10% organics. (The Source Area 2 diatomaceous earth filter cake materials contain approximately 37% petroleum hydrocarbons.) In the June 1989 ROD for OU2, the on-Site incineration remedy was selected, in part, to satisfy the statutory preference for treatment of waste materials that would result in a permanent and significant decrease in the toxicity, mobility, or volume of the hazardous substances in the waste. EPA believes that both the on-Site and the off-Site incineration alternatives are, today, protective of public health and welfare and the environment and cost effective. EPA also believes that certain forms of waste stabilization are, today, also protective and cost effective for the type of waste being considered for remediation at the Douglassville Disposal Site, and that such stabilization would satisfy the statutory preference for treatment of wastes.

Of considerable importance in this matter is the protection of public health and welfare and the environment balanced with cost considerations for each of the remedies. EPA believes that certain stabilization technologies can effectively immobilize a significant portion of both the inorganic and the organic constituents of the oily wastes from Source Areas 2 and 9. EPA believes that a properly designed stabilization regime, if implemented at the Site, will, both during its implementation, and into the foreseeable future, be protective of public health and welfare and the environment. EPA believes that a stabilization remedy is protective of public health and welfare and the environment. EPA's selected alternative for remediation of the Source Area 2 and 9 wastes is lime-based stabilization with on-Site landfilling of the stabilized materials.

COMMUNITY PARTICIPATION

Pursuant to Section 300.67(c) of the National Contingency Plan (NCP), a Community Relations Plan was developed for the Site. In compliance with Sections 113(k)(2)(i-v) and 117 of CERCLA, the Administrative Record, including the Proposed Remedial Action Plan, was placed for public consideration at the Union Township Building, Center Road, Union Township, Pennsylvania. An announcement of the availability of the Administrative Record was placed in the Pottstown Mercury and the Reading Eagle on May 10, 1999. The Administrative Record included the FFS Report which listed the alternatives considered for the filter cake wastes in Source Area 2 and the contaminated sediments in Source Area 9. A period of public review and comment on the Proposed Remedial Action Plan was held from May 10 through June 9, 1999. A public meeting regarding the Proposed Remedial Action Plan was held on May 19, 1999 at the Union Township Building. A transcript of that meeting is included in the Administrative Record. All documents relevant to the development of the FFS and the selection of the remedial alternative were available to the Pennsylvania Department of Environmental Protection (PADEP) for its consideration during the FFS process.

PERFORMANCE STANDARDS

The remedial actions required by this Rod Amendment primarily consist of the excavations of oily diatomaceous earth filter cake materials in Source Area 2 and contaminated sediments in Source Area 9, the stabilization of those materials utilizing a lime-based stabilization technology, and the on-Site landfilling of the stabilized materials. The remedial action will, at a minimum, meet the ARARs delineated above for the stabilization alternative. Also, the remedial action will be conducted pursuant to any requirements set forth in a Remedial Design for the stabilization alternative that is developed pursuant to this ROD Amendment and that is accepted by EPA. The stabilized material will, at a minimum, satisfy the following criteria:

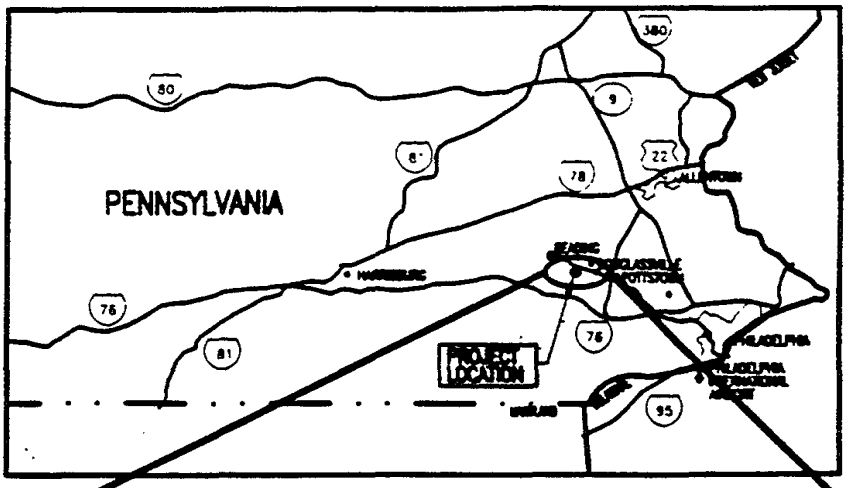
- No exceedances of toxicity characteristic limits as d determined using the Toxicity Characteristic Leaching Procedure (TCLP);
- No exceedances of the toxicity characteristic limit for lead (5 mg/1) as determined using the Synthetic Precipitation Leaching Procedure (SPLP);
- No exceedances of the toxicity characteristic limit for lead (5 mg/1) as determined using SPLP following wet/dry stress testing;
- No oil release of greater than one percent (1%) after applying 50 psi pressure for 20 minutes during liquids release testing; and,
- No oil layer forming over a 24-day period of immersion in water.

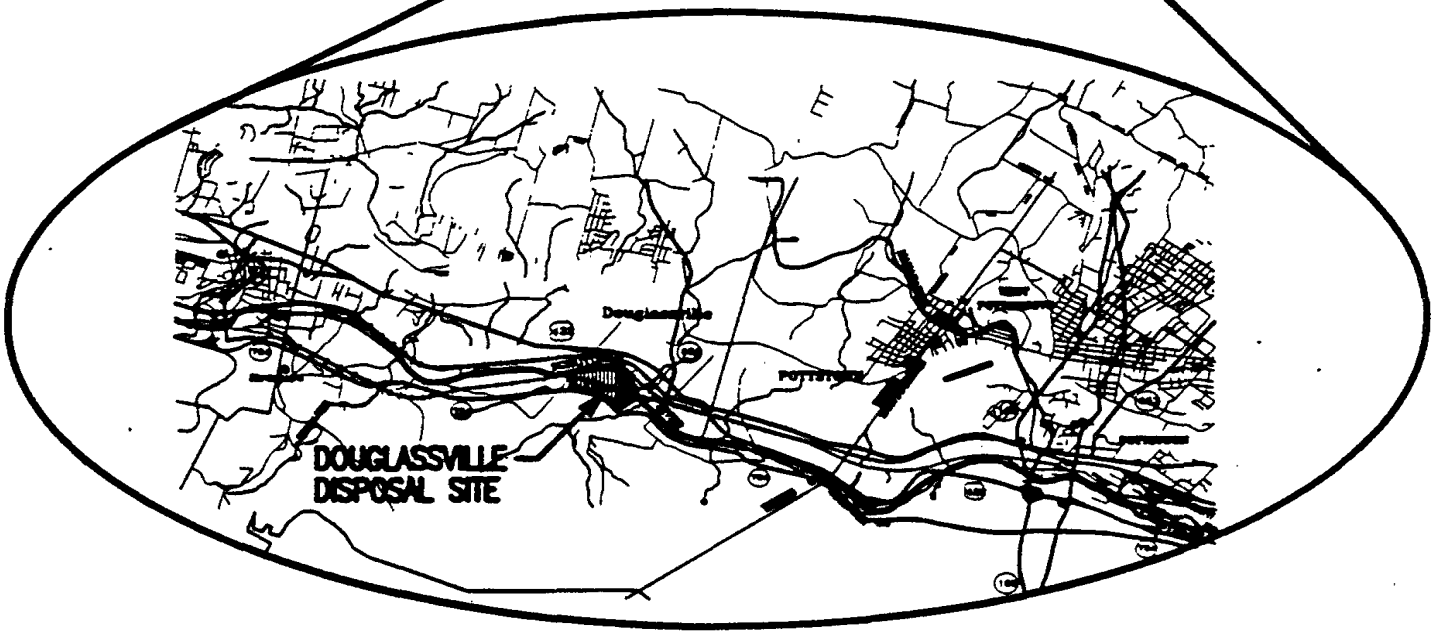
STATUTORY DETERMINATIONS

This remedy satisfies the remedy selection requirements of CERCLA and the NCP. The remedy is expected to be protective of public health and welfare and the environment, complies with ARARs, is cost-effective, and utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable. The remedy satisfies the statutory preference for treatment as a principal element of the remedy.

Figures

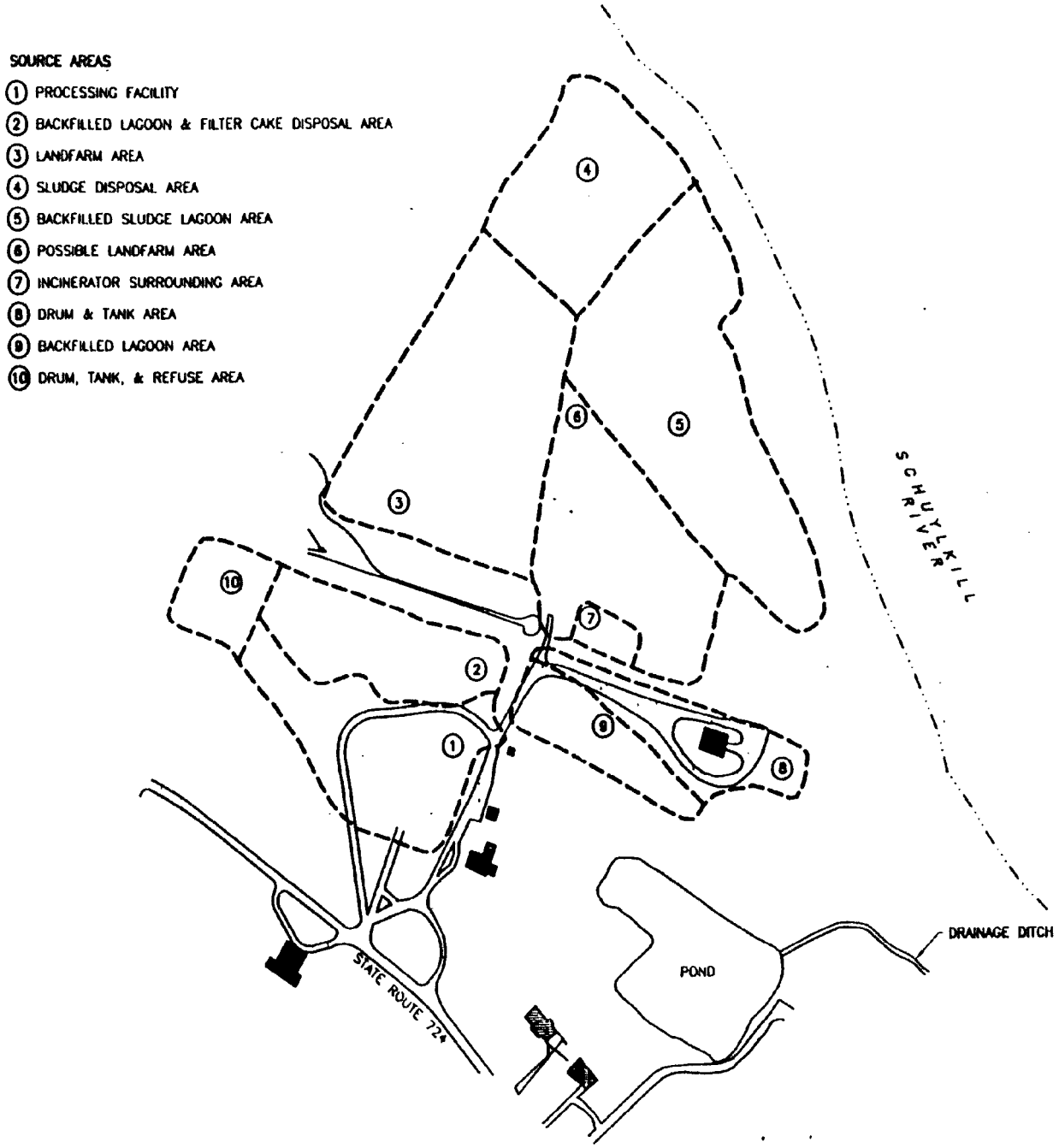
VICINITY MAP
NOT TO SCALE





PROJECT LOCATION MAP
NOT TO SCALE

Figure A
SITE LOCATION



N

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SCALE IN FEET

Source Area Boundary

Road

SOURCE:
NUS, October 1988
TAMS, March 1993

AR310735

Figure B

SOURCE ARE ATION MAP

Douglassvil sposal Site

Pennsylvania Department of Environmental Protection
909 Elmerton Avenue
Harrisburg, Pa 17110-8200
August 5, 1999

Southcentral Regional Office 717-705-4704
FAX 717-705-4930

Mr. Abraham Ferdas (3HS00)
Hazardous Waste Management Division
U. S. Environmental Protection Agency
Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Douglasville Disposal Site
Draft Record of Decision Amendment

Dear Mr. Ferdas:

The Record Of Decision (ROD) Amendment for the Douglasville Disposal Superfund Site, Union Township, Barks County, was received July 26, 1999. It has been reviewed by the Department of Environmental Protection (DEP).

The June 1989 ROD fbr Operational Unit Two (OU-2) called for on-site thermal treatment (incineration) of oily filter cake wastes in Source Area 2 and oily sediments in the drainage way that passes through Source Area 9. This current Amendment replaces the incineration remedial action with a lime-based stabilization as proposed by the Potentially Responsible Parties (PRPs).

DEP does not concur with the proposed ROD Amendment for OU-2 at the Douglasville Disposal Superfund Site. DEP asserts that the Land Recycling and Environmental Remediation Standards Act (Act 2), 25 PA Code Chapter 250 (Act 2 promulgated regulations), and Article IX Pennsylvania Residual Waste Management regulations, contain applicable or relevant and appropriate and necessary requirements to ensure that the remedy is protective of human health and the environment. The Amendment does not address these requirements.

DEP requested provisions of Act 2 and promulgated regulations be included to address the amount of contaminated soils that would be excavated and treated with the proposed lime stabilization. Contamination migrating from soil to groundwater and then being transported by groundwater to the Schuylkill River should not exceed DEP water quality standards that are protective of human health and aquatic life uses.

Definitions § 250.1. States "Regulated discharge–A point or nonpoint source discharge subject to the permit or approval requirements of chapters 91–105 and any diffuse surface or groundwater dis-

STATE

LETTER

charge to surface waters which has the potential to cause an exceedance of the water quality standards in Chapter 93 (relating to water quality standards)." Relationship to surface water quality requirements § 250.406. (c) states in part "For purposes of determining compliance with surface water quality standards from a diffuse surface or groundwater discharge, the person shall determine the expected instream regulated substance concentrations, that are attributable to releases at the site, using mass balance techniques and appropriate sampling for groundwater/surface water mixing at design flow conditions." Therefore, in our opinion, the loading to the Schuylkill River should be determined by modeling the inflow at the Q7-10 stream flow in the river using the expected concentration of the contaminates in the groundwater discharge.

In addition DEP believes that requirements of the Residual Waste Management Standards are necessary to provide protection of human health and the environment with the disposal of the stabilized material on site.

DEP also asserts the following conditions with respect to the proposed remedy:

- EPA will assure that DEP is provided an opportunity to fully participate in any negotiations with responsible parties.

- DEP will be given the opportunity to review and comment on documents and concur with decisions related to the design and implementation of the remedial action, to assure compliance with Pennsylvania Applicable or Relevant and Appropriate Requirements (ARARS).

- DEP's position is that its design standards are ARARS pursuant to SARA Section 121, and we will reserve our right to enforce those design standards.

- DEP reserves its right and responsibility to take independent enforcement actions pursuant to applicable law.

Thank you for the opportunity to comment on this EPA Record of Decision Amendment. If You have any questions regarding this matter, please contact me at 717-705-4704.

Sincerely,

Michael R. Steiner
Regional Director

RESPONSIVENESS

SUMMARY

RESPONSIVENESS SUMMARY

Newspaper ads announcing the availability of the Proposed Remedial Action Plan (PRAP) and inviting public comment on that Plan were published in the Pottstown **Mercury** and the Reading **Eagle** on May 10, 1999. A public comment period was held from May 10, 1999 through June 9, 1999. On May 19, 1999, a public meeting was held at the Union Township Municipal Building near the Site to discuss the PRAP. Attendees at the public meeting included Union Township Supervisors, a representative of the Schuylkill River Greenways Association, a representative of the Pennsylvania Department of Environmental Protection and four other citizens. A question and answer session was held at the end of the public meeting and the questions asked, along with EPA's responses, are included in the public meeting transcript. The transcript of the public meeting is included in the Administrative Record. During the public comment period, two letters of comments were received by EPA.

One citizen commentor urged that the off-Site incineration alternative (Alternative 3) be selected. In the letter, the commentor discussed the oil spillage that had occurred in 1972 as a result of Hurricane Agnes. That oil spillage resulted from the discharge of waste oil from former oil storage lagoons that had held several millions of gallons of waste oil, and which had been located in the northern portion of the Site. The filter cake waste pile, which is the subject of this Amendment, did not contribute a substantial part of the oil discharge that occurred from the Site in 1972. The commentor believes that the off-Site removal of the filter cake waste pile would leave the Site free of contaminants, but that is not the case. The filter cake waste pile constitutes only approximately two acres of the 50-acre Site.

As part of the FFS process, the off-Site incineration alternative was evaluated. EPA has concluded that off-Site incineration would be no more protective to public health and welfare and the environment than on-Site lime-based stabilization of the filter cake wastes. Also, the off-Site incineration alternative was, by far, the most costly of the alternatives considered in the FFS for the remediation of the filter cake wastes. Removal of the filter cake waste pile to an off-Site incineration facility would not eliminate contamination at the Site. The Site consists of approximately 50 acres of land, and the majority of the subsoils are contaminated to varying degrees. The contamination present in the major portion of the Site area would remain on-Site even if the two-acre pile of filter cake wastes were removed from the Site.

A letter of comments was received from the Commonwealth of Pennsylvania, Department of Environmental Protection (PADEP). In it's letter, PADEP expressed, *"This level of remediation* [referring to EPA's preferred alternative for the filter cake wastes] *may not be to the extent necessary to prevent contamination migration from site soil into the groundwater and from there to the Schuylkill River. In addition to the filter cake waste, contaminated soil, and sediment should be remediated to the degree needed to be protective of human health and aquatic life uses of the Schuylkill River."* EPA believes that the combined remediation alternatives as set forth in the June 1988 ROD, the June 1989 ROD and this Amendment to the June 1989 ROD are protective of public health and welfare and the environment. Regarding the

Schuylkill River, EPA's Remedial Investigation, which examined the possible effects that the Site might be posing to the river, found that there was no significant impact to the Schuylkill River resulting from the contamination at the Site. Most of the 50-acre Site area contains subsoils that are contaminated, and the ground water under the Site is also contaminated. The filter cake waste pile, which is the major Site area being addressed under this ROD Amendment, is only approximately two acres of the approximately 50 contaminated acres that comprise the Site. EPA believes that the remedial actions that have already been implemented at the Site, combined with the stabilization of the filter cake waste pile will result in the Site being fully protective of public health and welfare and the environment. Additionally, after the completion of the stabilization remedial action, which will be the last remedial action required at the Site, the waters of the Schuylkill River will be sampled as part of the five-year review process that is required under Section 121(c) of CERCLA. The next five-year review is due in April 2004.

In its letter of comments, PADEP also stated that, "*The Department believes that additional State ARARs are applicable or relevant and appropriate and necessary to ensure that the remedy is protective of human health and the environment.*" EPA has considered the universe of potential ARARs, and the ARARs that EPA believes are necessary to ensure that the remedy is protective of human health and the environment are listed within the Amendment. In a letter dated May 13, 1999, EPA explained to PADEP why EPA believes that the Commonwealth's Residual Waste Management Standards and the Land Recycling and Environmental Remediation Standards Act (Act 2) are not ARARs for the ROD Amendment. Nevertheless, the remedy is protective. That letter is part of the Administrative Record for this Amendment.